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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Jin-ho Park

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EXAMINER

HUFFMAN, JULIAN D

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/671,940

Applicant(s)

PARK ET AL.

Examiner

Julian D. Huffman

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 12-24 and 33-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 11, 25-32 and 40-42 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 12-24 and 33-39 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 29 September 2005.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-8 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Meyer (U.S. 6,239,817 B1).

Meyer discloses:

With regards to claim 1, a printer (fig. 1) comprising:

an ink head (26) comprising a nozzle unit (27) to eject ink drops in a shingling mode providing edge printing (the nozzle units are capable of being controlled so as to eject ink droplets in a shingling mode)

an ink collector (30) positioned under paper to correspond to the nozzle unit and having first and second wall portions to enclose a space to collect ink therebetween (upstream and downstream walls); and

first and second support beams (72-82 and 84-94, fig. 2) extending from the first and second wall portions of the ink collector in the paper feed direction and in an opposite direction to the paper feed direction (beams extend in the feed direction since they have a length extending in that direction, and also in the direction opposite to the paper direction, due to their length), respectively, and alternately arranged with each other in a scan direction (even and odd beams may serve as first and second beams, the even and odd beams alternating in the scan direction).

With regards to claim 2, the first and second support beams are extended in the paper feeding direction by first and second lengths, respectively, the first length comprises a first paper contact portion and a first paper non-contact portion shorter than the first paper contact portion, and the second length comprises a second paper contact portion and a second paper non-contact portion shorter than the second paper contact portion (since each beam is angled, it has portions with varying lengths/heights, and the lengths/heights are capable of contact or not contacting the paper in the manner claimed).

With regards to claim 3, the first and second support beams extend to have the same length to support the paper (fig. 1).

With regards to claim 4, an end point of the first support beam and an end point of the second support beam face each other in the scan direction (figs. 2 and 3).

With regards to claim 5, the end point of the first support beam extends in the paper feed direction to interlace with that of the second support beam (since the first and second support beams are formed alternately in the scan direction, they interlace with one another).

With regards to claims 6 and 7, the first and second support beams have the same height in a direction toward the ink head, the direction perpendicular to the paper feed direction and the scan direction (fig. 3).

With regards to claim 8, the first and second support beams extend from barriers, which partition the ink collector (fig. 3).

With regards to claim 11, the second support beam has a slant end portion inclining in the paper feed direction (figs. 2 and 3).

4. Claims 1, 40 and 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Kodama et al. (U.S. 2005/0078147 A1).

Kodama et al. discloses :

With regards to claim 1, a printer comprising:

an ink head comprising a nozzle unit to eject ink drops in a shingling mode providing edge printing (the nozzle units are capable of being controlled so as to eject ink droplets in a shingling mode)

an ink collector (fig. 22) positioned under paper to correspond to the nozzle unit and having first (3) and second (10) wall portions to enclose a space to collect ink therebetween; and

first and second support beams extending from the first and second wall portions of the ink collector (38) in the paper feed direction and in an opposite direction to the paper feed direction (fig. 21, the beams extend in both directions), respectively, and alternately arranged with each other in a scan direction (the first support beams may be the odd beams, while the second support beams may be the even beams).

With regards to claim 40, a printer comprising:

an ink head having a nozzle unit to eject ink drops (fig. 1);

an ink collector (fig. 22) positioned under paper to correspond to the nozzle unit and having first and second opposing wall portions to define a space to collect ink (14b, 10);

one or more first support beams extending from the first opposing wall portion of the ink collector partially across the defined space (38); and

one or more second support beams extending from the second opposing wall portion of the ink collector partially across the defined space (38).

With regards to claim 41, a printer comprising:

an ink head having a nozzle unit to eject ink drops (fig. 1);

an ink collector (fig. 22) positioned under paper to correspond to the nozzle unit and having first and second opposing wall portions (10, 14b) to define a space to collect ink; and

first and second support beams (38) extending from the first and second opposing wall portions of the ink collector to segment the defined space of the ink collector without partitioning the defined space (fig. 22).

5. Claims 40-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsushashi (U.S. 5,997,129).

Matsushashi discloses:

With regards to claim 40, a printer comprising:

an ink head having a nozzle unit to eject ink drops (fig. 7);

an ink collector positioned under paper to correspond to the nozzle unit and having first and second opposing wall portions to define a space to collect ink (bottom surface 212a in fig. 8 is a bottom wall of the ink collector and any two portions of this wall satisfy the limitation of the "wall portions", and the wall portions oppose each other in the scan direction);

one or more first support beams extending from the first opposing wall portion of the ink collector partially across the defined space (any one of support beams 214 extends from a portion of the bottom wall that surrounds the support beam and into a space defined by the bottom wall and side walls, which satisfies the language "across the defined space" and "wall portions to define a space"); and

one or more second support beams extending from the second opposing wall portion of the ink collector partially across the defined space (any other support beam and its corresponding wall portion).

With regards to claim 41, a printer comprising:

an ink head having a nozzle unit to eject ink drops (fig. 7);

an ink collector (fig. 8) positioned under paper to correspond to the nozzle unit and having first and second opposing wall portions to define a space to collect ink (wall portions 212a surrounding a beam 214); and

first and second support beams extending from the first and second opposing wall portions of the ink collector to segment the defined space of the ink collector without partitioning the defined space (214).

With regards to claim 42, the paper is supported by the first support beams without contacting the second support beams at a first time, and the paper is supported by the second support beams without contacting the first support beams at a second time following the first time (paper is capable of being fed in the manner claimed, for example by a skewed feed of the paper).

6. Claims 25-29, 31 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuhashi (U.S. 5,997,129).

Matsuhashi discloses:

With regards to claim 25, a printer (fig. 7, abstract) comprising:

an ink head (located below 203) ejecting ink drops at an edge of a printing medium (abstract);

an ink collector (211) having first and second wall portions spaced-apart from each other and extending in a direction perpendicular to the printing medium to define a space to collect ink from the printing medium (figs. 7 and 8, element 211, column 2, lines 29-37 and column 11, lines 4-9, 212a is a wall, and 212a has first and second portions which define a space to collect ink using ink absorbing material 213);

a plurality of first support beams extending over the space at an upper portion of the ink collector in a printing medium feed direction to support the printing medium at a printing medium feed side of the ink collector (consecutively numbering the support beams from left to right, odd numbered support beams may be considered as first

support beams, each support beam supports the printing medium at a printing medium feed side and a discharge side); and

a plurality of second support beams extending over the space at an upper portion of the ink collector in an opposite direction to the printing medium feed direction and alternately arranged with the plurality of first support beams to support the printing medium at a printing medium discharge side of the ink collector (even support beams).

With regards to claim 26, the printer of claim 25, wherein the ink head comprises an ink nozzle to eject ink drops on the printing medium when the ink head moves in a scan direction (column 9, lines 63-66 and column 2, lines 29-37, since the device is an ink-jet head, it has a nozzle; a jet is defined as "a forceful stream of fluid discharged from a narrow opening or a nozzle).

With regards to claim 27, the printer of claim 26, wherein the ink collector (fig. 8, 211) is located under the printing medium (205) and has a width corresponding to the width of the ink head (fig. 7 and 8, the collector is disposed under the nozzle unit/print head 203 to collect the ejected droplets and thus has a width corresponding to the width of the nozzle unit).

With regards to claim 28, the printer of claim 26, wherein the ink collector is located under the printing medium and has a width wider than the width of the ink head (figs. 7 and 8, the collector is wider than the print head 203).

With regards to claim 29, the printer of claim 27, wherein the ink collector further comprises:

a floor portion, and the space portion has an opening above the floor portion to catch the ink drops (fig. 8, column 10, lines 35-36).

With regards to claim 31, the printer of claim 25, wherein the ink collector comprises:

- a plurality of space portions (a space portion is defined between each beam);
- and

- a plurality of barriers separating the plurality of space portions, wherein the first and second support beams integrally extend from the barriers alternately with respect to each other (the lower portion of each support 214 is a support barrier, with the integral top portion functioning as the support beam).

With regards to claim 32, a printer (fig. 7, abstract) comprising:

- an ink head (203) ejecting ink drops at an edge of a printing medium (abstract);

- a platen along which the printing medium is conveyed (fig. 8);

- an ink collector (figs. 7 and 8, element 211) including a space portion positioned beneath an upper surface of the platen (205) to collect excess ink from the printing medium (column 2, lines 29-37 and column 11, lines 4-9);

- a plurality of first support beams (214, even) disposed within the space portion at a printing medium feeding side of the ink collector extending in a printing medium feed direction to support the printing medium above the space portion; and

- a plurality of second support beams (214, odd) disposed within the space portion at a printing medium discharge side of the ink collector and extending in an opposite direction to the printing medium feed direction, the plurality of second support beams being overlapped by the plurality of first support beams to support the printing medium during feeding thereof between the ink head and the ink collector (fig. 8).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer in view of Matsuhashi.

Meyer discloses everything claimed with the exception of a second support beam with a round end portion.

Matsuhashi discloses support beams with round end portions (fig. 8, 214).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the beam of Meyer so as to have a round end portion as taught by Matsuhashi for the purpose of providing a smooth path for the print medium to travel thereby providing a more constant feed.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuhashi in view of Kobayashi et al. (U.S. 6,158,840).

Matsuhashi discloses an absorber (fig. 8, element 213) and everything claimed with the exception of the space portion comprising a felt to absorb ink drops caught by the space portion.

Kobayashi et al. discloses a felt ink absorber (column 3, lines 35-37, fig. 1, element 15).

It would have been obvious to one having ordinary skill in the art at the time of the invention to replace the absorber of Matsuhashi with a felt absorber, as suggested

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by Kobayashi et al., for the purpose of providing a "porous material having excellent ink receptivity and retention" (column 3, lines 35-37).

Allowable Subject Matter

9. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments


10. Applicant's arguments have been considered and are moot in view of the new grounds of rejection.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (571) 272-2147. The examiner can normally be reached on 10:00a.m.-6:30p.m. Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Julian D. Huffman
Art Unit 2853
11 December 2006